

Abstract of the Disclosure

An apparatus 10,110 is provided that measures the speed of sound or acoustic disturbances propagating in a fluid or mixture having entrained gas/air to determine the gas
5 volume fraction of the flow 12 propagating through a pipe 14. The apparatus includes an array of pressure sensors disposed axially along the length of the pipe. The apparatus measures the speed of sound propagating through the fluid to determine the gas volume fraction of the mixture using adaptive array processing techniques to define an acoustic ridge in the k - ω plane. The slope of the acoustic ridge 61 defines the speed of sound
10 propagating through the fluid in the pipe.